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ANTHROPOGEOGRAPHY OF HIGH ALTITUDE TRANSHUMANCE REGION OF WESTERN HIMALAYA

Introduction

Environment of highlands in general and the Himalayas in particular, is ecologically fragile. In highlands, with the increase in altitude the capability to minimize environmental disturbances declines. Himalayas being young in the process of orogeny, comprise of geologically tenuous formations (excepting a few tracts). Steep slopes, great range of altitude and uncertain climatic conditions are immensely vulnerable to disturbances that add to the present phase of mismanagement of human enterprises. If this level and scale of interaction continues, the aftermath will be an undesirable environment which could be the only resource base for sustenance of thousands of dwellers, who are equipped with a technology which cannot compete with the state of transformation. Degradation of Himalayas, however, is an integrated conjuncture of various land use patterns, for instance, contemporary deforestation, overgrazing, wasteful agricultural practices and mismanaged development ventures.

The communities of the Himalayas are aboriginal. The Brahmins and Rajputs had migrated from the plains during the times of Aurangzeb. Among the nomads Gaddis are shepherds, who move with their sheep to the high mountain pastures, and into Lahul and Spiti across the Rohtang Pass in summer, and down into the rich fields of the Kangra Valley in winter. The region has unique scenic grandeur, which has cradled an unsophisticated culture. The great cultural heritage had been preserved in the traditional life of the people in their folklore, folkways, and folksongs.

The Historical Outline

The Kullu region has a deep-rooted historical background. The term 'Kuluta' finds mention in various old Sanskrit treatise like Vishnupurana, 'Ramayana', 'Mahabharata', 'Markandey Purana', 'Brihad Sanghita' and 'Rajtarangini'. Even today, there exists an old temple devoted to 'Hadimba'

and 'Ghatotkash' (wife and son of 'Bhima' respectively) at Manali. Sir A. Cunningham, first pointed out 'Kulutas' as the original name of Kullu. A late text *Kulantapitha-mahamtamyer* says that the modern name Kullu originated from Sanskrit term *Kuluntapitha* which signifies that the province is situated at the end of the habitable world (*Kulanta*).

The first king of Kullu, whose name appears on the coin of 1st century A.D., was Viryasa. The importance of the valley was gained during the opening of trade route between India and Tibet through the Kullu valley mainly at the time of Chinese Pilgrim Hieun Tsiang during 7th century A.D. People from Ladakh and Tibet because of their frequent visits to the Kullu areas have affected the social and cultural aspects of the valley. It is also described that Kullu was a distinct state during the time of Harshbardhana, and the original name of Kullu, was Kuluta. The available literature on Kullu indicated that the first king of Kullu i.e. Viryasa was followed by Pal dynasty who ruled about 200 years. Earlier, the capital of Kullu was located at Jagatsukh which was brought to Nagar at the end of Pal dynasty. According to *vansavali* (hierarchy of family) Pal dynasty, Behangmani and his descendants ruled for 87 generations. Among them, Maan Singh was the most outstanding ruler of the Kullu. It was in his time (A.D. 1688-1719) that Kullu was at the zenith of its power and glory. The last ruler of Pal Dynasty (the 87th generation) was Ajit Singh, who was disposed by Sikhs in A.D. 1840.

Maharaja Ranjeet Singh became the overlord of almost all hill stations. The Kullu valley was one of the important among them. After a spell of six years Maharaja Ranjit Singh expired and the power of Sikhs declined abruptly resulting in the defeat of Sikhs by Britishers in 1846. Since then, the valley was under the British rule till 1947. After the eclipse of British rule, the Independent India constituted a separate administrative unit Himachal Pradesh by merging Punjab Hill States (except Nalagarh) and the Punjab States of Sirmaur, Chamba and Sulket on April 15, 1948 and Mandi included following suit on 1 May, 1948. However, the entire Himachal was included in the Maha Punjab State. Later the Parliament enacted the Part C States Government Act, 1951 by which Himachal Pradesh was made a Part C State under a Lieutenant Governor. Towards final development the Parliament, in December 1970, passed the bill to make Himachal Pradesh a full-fledged state. As for Kullu district is concerned, it was made into a separate district in 1963, when it was in the composite Punjab. Prior to that, it was a Tehsil of Kangra district. After formation of the district it is comprised of four Tehsils and Sub-Tehsils namely, Kullu, Banjar Nermand and Ani. The present case study, the Upper Beas Basin falls under Kullu Tehsil of Kullu district. The District Census Handbook, 1991 records only four revenue villages namely Palchan, Buruwa, Bashist and Manali alongwith their 18 sub-villages or locally called Phati namely, Kothi, Ruwar, Kulang, Solang, Majhahj, Shanag, Goshal, Bahang, Baretta, Dhungri, Mathiana, Koshla, Chadiary, Kanchanikoot, Samahan,

Chichoga, Aleo and Jharag. On the other category, Marhi, Gulaba and Rahla are three seasonal settlements. All the above revenue villages and their phaties fall in Naggar Development Block of the Kullu District under the stairs of the Panchayati Raj System.

Human Habitat and Housing

The physical conditions of the mountain environment have exercised a most important influence on the distribution of human settlements. There is a distinct clustering of human settlements in the valley areas. The valley has good soils, irrigation from the snow-fed perennial hill streams and comparatively gentle slopes. These factors make the valley a favourable area for the development of agriculture and settlement of agricultural communities. The mountainous tract in the north and the east of the Himalayan Beas Basin are almost empty. These are areas of rugged relief, forests, snow and glaciers. Empty places consist of mountain slopes generally above 3000 m forests, bare precipitous slopes, snow and glaciers prohibit the establishment of human habitation. Temporary huts of nomads may be the only settlements there.

Most of the population resides in rural habitations varying in size from isolated hamlets to agglomerated settlements. Generally, the dwellings are scattered singly or in tiny groups over the hills. Three main types of settlements may be distinguished:

- (i) Semi-sprinkled. fragmented or hamlet type,
- (ii) Sprinkled or dispersed type.
- (iii) Isolated or homestead type.

Linear settlements develop along some ridges or stream banks. The houses are scattered in order to be near the patches of cultivable land, Intensive use of land, collective management of irrigation water and a common agricultural routine has led to the growth of small hamlets or semi sprinkled habitations. In Kullu, the hamlets are stringed in an arterial pattern in the valley of river Beas on either side of the water channel. The vast spaces adjoining the valley are mountainous and are clotted with forests. snow and glaciers. In them, a few lonely huts of the foresters or the glaziers may be observed, but the majority of the habitations cling to the valley floor where land for cultivation is available.

The concentration of human habitation generally goes side by side with the concentration of means of communication. Discontinuity of break in the slope tends to produce a linear pattern between the river valley and the higher slopes. Marked concentrations of habitation can be seen. Spur tops sometimes provide sufficiently broad and fairly level surface. Human habitations have sprung up on these sites. Sprinkled or dispersed habitations have developed where the arable land is divided up in patches as a result of

dissection of relief and soil and its character of hydrography. Houses are grouped without any plan. Except at cross-roads, where a few shops are generally located, all houses are widely separated from each other. Caste differentiation leads to separate areas for the various castes. The menial castes live on the outer margins. The high caste residents often appropriate the higher sites in the village but the custom is not universal.

In Kullu, the land for construction of houses is very much restricted. Hence, houses become taller in the same day as in the cities; vertical expansion takes place due to lack of building space. This type of house also commands a good view. Built of stone and timber, they give an appearance of solid comfort. The houses are square or oblong turrets often much greater in height than in length or breadth and crowned by sloping roofs covered with slate or fit shingles. The most common type of house is built of loose dressed--stone, with wooden courses at intervals of 0.60 m to 0.90 m. Where suitable stone is not available, houses may be built entirely of wood. From the foundation, the houses shoot up to three to four storey high. No mortar or cement is used. The walls are of dry stone masonry where the stones are kept in place by timbers placed upon them at vertical intervals of 0.60 m to 0.90 m. The more the wood used, the greater the solidity of the house. This style of architecture is locally known as *kat-kuni* or timber cornered. The ground floor has no windows and is almost invariably used as cattle shed. This management helps to keep the cattle warm and secure from the attacks of wild animals. The floor or the second storey is made of wooden planks. It is used as a granary and storeroom. Above this is the third storey (which is not always there in all houses) and then the roof. A crude chimney hole is kept in the roof for the escape of smoke from the hearth on the second floor where the family lives and sleeps and also cooks and eats food. The space on this floor is extended by the addition of a wooden balcony on one, two or all sides. This protruding doped-in balcony gives the whole building a top-heavy appearance. The house is entered through the balcony by means of a rough ladder. The ladder sometimes consists of just a log with notches cut in it but the better class houses have wooden staircases. Within, there is access from the top floor to the granary on the first floor by means of a trap door. Around the house is a yard paved with flat slabs and enclosed by a low dry-stone wall. It is used as a rice husking and threshing floor for other domestic purposes. Nearly every house has several bee-hive holes let into the walls.

Social Practices and Reactions

The people of Kullu Valley are submissive, shy and reserved. Their adherence to truth is remarkable and a most honorable feature in their character. Living in a harsh environment, they fear the malignant words of nature and propitiate every natural phenomenon. Witchcraft is still believed in by many and day to day incidents are ascribed to supernatural causes. The

'medicine man' and the priest have great influence. The hill people as a whole are very fond of music and dancing. Dancing is popular especially on fairs and ceremonial occasions. The main dialect is known as Kuluhi. Kuluhi possesses most of the peculiarities of the western Pahari dialects. Also here, there are numerous variations. Isolation of the area in the mountains and early infiltration of Tibetans is responsible for this development. The isolation serves as a preserve of culture. The dress of the people varies according to the climate. In Kullu, flowers and jewellery are much in fashion. The women's traditional dress is a single Pattu (blanket) generally a combination of red and white. Great bunches of silver earrings, necklaces, bracelets and anklets of different shapes complete their accessories. Men's traditional dress consists of a loose woollen tunic girt in at the waist with a sash. Loose woollen trousers gathered—in that at the ankles – are worn in cold weather and on festive occasions. A white or check – blanket like plaid, lends a picturesque look to this loose fitting costume.

Food

Food is simple and obtained from local produce. Rice, maize, wheat and some coarse grains are the staple food. Rice is eaten in the irrigated tracts. In poor uplands, coarse grains like *kodra*, *kathu* and *kangri* etc. are consumed. Maize, wheat and coarse millets are eaten. Linseed or rapeseed oil is used by poorer classes, in place of ghee, *Saag* (greens), dal (pulses) and potatoes are much used. Now and then people are able to supplement their regular food with flesh of wild pig, fish and small game. Goats are occasionally sacrificed and their meat eaten on occasions. Honey is available from forest hives or box hives. Butter, milk is used as ghee; the use of tobacco is almost universal. Both men and women of 'lower' castes indulge in smoking. The cultivating and other castes are all fond of liquor. Their favourite drink is hill beer - 'lugri', made from rice.

Social Customs and Rituals

Religion, caste and tradition play the chief role in the observance of various social customs and ceremonies. 'Juneo' (or the sacred thread) is worn by the high castes like Brahmins and Rajput. The remarriage of widows is common among certain classes and is called 'Jhanjrara'. There is an idea current in the hills that, of the land holding castes, the Thakurs are either indigenous to the hills or indigenous by half blood and that Brahmins, Rajputs and others are the descendants of invaders and settlers from plains. The population is almost entirely Hindu and the prevailing religion is aboriginal worship dressed up in Hindu forms. Early beliefs and religious practices are still retained in these mountain preserves. Worship of ancestors, spirits is retained in these mountain preserves. Worship of earth of 'Khetrpal' is practiced by the cultivators for securing a bountiful harvest. 'Minjran ka Mela' is a survival of the aboriginal worship of River God. River Beas and its presiding

deity the Vyas, are worshipped on the day of 'Vyas Puja', Holy *basil* or 'Tulsi' (*Ocymum sacrum*) and 'Pipal' are universally worshipped, besides many other trees. The 'Sun' God is also among their favourite God.

Festivals and Ceremonies

There is an annual parade at Kullu Dussehra ground. Gods and Goddesses visit each other and the devotees dance around. On the last day, an effigy representing Ravan (Demon king of Lanka) is beheaded to celebrate the triumph of Rama or Raghunathji. This is the Dussehra fair. After Dussehra, few fairs are held till spring as it becomes too cold outside. The festival of lights 'Diwali' in Kullu is celebrated as 'Koli-ri-Diali'. There is another fair at Malana in Sawan in honour of Deota Jamlu. People also celebrate Hindu and Sikh festivals like Holi, Shivratri and Baisakhi. Of the nature festivals, the chief is Basant Panchami and is held at the advent of spring. Among other nature festivals are "Haryali" (festival of rain), Minjram (festival of food) and Sair (harvest festivals of fruits). Dhoongri fair is held in May-June for three days in the memory of Devi Hadimba who meditated at Dhoongri.

Demographic Profile

Being a mountainous state, it has very low population as compared to the other states of India. Lack of infrastructure along with the dominance of natural calamities has prevented the natural growth of population. The change in the population of the area, which took place during 80s, is the result of incoming migration. Till 1961, the Kullu District experienced a slow growth in population with less than 5.0 per cent. Rapid growth has been observed after the decade of 1971 and it rose to 26.28 per cent in 1971 (Table 1).

The Kullu Valley accommodates major portion of the population of Kullu district. Out of 160 villages of the Kullu district, 109 are located in Kullu Valley. Out of the population of 2,38,734 of the district 1,53,831 population is concentrated in this valley. The four revenue villages located in the study area cover about 1207 ha area of the Beas basin having total population 12,784.

The enumerated data has been taken from different aspects of population such as phati wise, panchayat wise, village wise as well as center wise. Data has been taken to find out the scattered regional growth of population. Data regarding castes has been taken to find out the spread of caste system and social set up of the valley. Literacy rate, employment status related data has been taken to access the awareness and skills of the people.

Caste System

The Upper Beas- Basin in general has mainly Rajput dominating population. Out of total population of 12784, 7959 (76.3%), belongs to general

category while 2200 (17.2%) and 825 (6.5%), scheduled castes and scheduled tribes respectively (Table 2).

The three main castes have been divided further into many sub-castes. The general category has been sub-divided into Rajputs, Brahmins and Lalas. Among the Harijans (Sudra) Chamar and Khatik are the major sub-castes of the Scheduled Castes while Bhot, Gujar Lahula, Khampa are the principal groups belonging to Scheduled Tribes.

From the administrative point of view the whole area has been divided into 5 Panchayats namely Palchan, Buruwa, Shanag, Manali and Bashisth. Among them Buruwa is largest one in terms of population. It has 4663 people which is about 36.5 per cent of the total population of the area while Palchan Panchayat has the smallest population i.e. 10.1 per cent of the total population.

Level of Education

One of the basic inputs in human resource development is education. Environmental awareness, technological advancement and economical growth are the parameters on which the skills and quality of life are assessed. Previously the interest in education was not high, as it is indicated by the community where maximum aged people are either illiterate or least educated. Since the last decade the awareness regarding education is increasing among the new generations. Besides a mountainous location, the region has comparatively better level of education.

The location of villages is the most responsible factor for variations in the status of education among the villages. Manali and Bashist are situated near the town. Therefore, the villages situated along the road and its vicinity respectively record maximum educational standard while Palchan and Kothi villages located at far-flung areas from the institutional amenities, thus have low status of education.

The awareness among the women is quite impressive as in every household the children are sent to school encouraged by mothers. The gradual ascending character in the literacy rate is quite obvious. Looking at the present trend of the infrastructure development as well as awareness and interest towards child education among the masses particularly among women, it can be projected that more satisfactory response can be achieved by the next decade.

Occupational Structure

Due to cold climate, unstable soil cover, increasing hazards and transportation risk the probability of industrial development is very low. Therefore, agriculture is the main stay of the economy. Maximum people are engaged in the agricultural activities. Out of total workers (3004) more than 76.3 per cent (2290) people are engaged in agriculture directly or indirectly.

Very nominal people are engaged in household industries (i.e. only 1.2 per cent) while the percentage of people involved in various services and tourism is 22.5 (677). The percentage of cultivators is maximum (72.5%). The most remarkable gift of the nature is the potential tourism like tracking, skiing, paragliding, as well as seasonal tea-stalls, etc. The major impact of such activities on general trend of occupation is observed that the proportion of agricultural labourers is negligible, i.e. 1.20 per cent.

Pattern of Urbanization

The state of Himachal Pradesh is one of the least urbanized states in the country. With a total urban population of 3, 26,000 the state constitutes only 7.61 per cent of the total population. The urban population in the state is not only considerably lower than the national average, but also it is the lowest among the states, and the union territories excluding Dadra and Nagar Haveli and Arunachal Pradesh. The urban population of Himachal Pradesh has increased due to migrants from outside. However, increase in urban population is gradually taking place. The total urban population in the state increased from 3,26,000 in 1981 to 4,57,000 in 1991 and it is expected that by 2011 AD this number will grow to 8,50,000 (Table 3).

Out of 47 towns in Himachal Pradesh, only one town has a population more than 50,000 while 30 towns have population less than 5000. The growth of the towns in the state is very slow as compared to the other towns in India. During 1951-61 the average growth rate was 15.89 which were raised to 35.68 per cent, while it was only 34.68 per cent during 1971-81. It is expected that during 2001- 2011 it will rise up to 45.00 per cent (Table 4).

The Kullu district has been divided into four administrative tehsils namely Kullu, Banjar, Ani and Nirmand. The total population of the district is 302432 (2012) which is about 5.84 per cent of Himachal Pradesh. The total urban population of district constitutes about 5.50 per cent, (2012). It is noted that out of four tehsils only one (Kullu) had urban population till the census decade of 1981. In 1991 the Banjar tehsil headquarter engaged as a small town having a population of about 1037 (2012), while the tehsils of Ani and Nirmand have absolute rural population.

Till 1941 the Kullu district was absolutely rural as it did not had any town. The district headquarter Kullu emerged as a town with a population of 3694 in 1951. In 1981 other towns such as Manali and Bhuntar came into being increasing the total urban population of the district to 21011 (2012) (Table 5).

So far as the urbanization in the Upper Beas Basin is concerned the available literature indicates that the valley has historical evidences of being the prime centre in northern Himachal Pradesh. Since the era of Pal dynasty to Maharaja Ranjit Singh, the Jagatsukh and Nagar were the prime service centers,

as they were the capital centers and got special attention. Later during the British rule another service centre was opened at Dana (presently called Manali) which was almost the end point of human settlement in Kullu valley. After independence of India, the first Prime Minister of India Pt. Jawaharlal Nehru visited this area and stayed in Manali for couple of nights. Since then, the official visits of government officials laid the construction of guest houses and other infrastructures which added to the value of Manali and it gained popularity as a service centre for the villages in the head water region of the river Beas.

Till the end of 70s, Manali was functioning as a small service centre. The major changes in the shape and size of Manali took place in the early 80s, which made Manali as a small town with Notified Command Area (NCA). The Kullu valley a greenish valley endowed with natural beauty got special attraction and Manali at the head of the Kullu Valley emerged as the focal point for tourism development. The process of urbanization in Kullu valley has involved not only the change of residence from village to town, but it has also come to have far reaching consequences for the socio-economic and political pulse of the people. Although only one town (Manali) is found in the specific study area (the Upper Beas Basin) but the analysis has been done in the other peripheral urban agglomeration such as Kullu and Bhuntar as well. Along these three towns, Manali shows excessive development basically due to tourism. The quality and quantity of hotels and guesthouses have indeed reduced it from a tourist destination to an urban slum without adequate water or sewerage facilities. At present there are about 640 hotels and guesthouses in and around Manali town which shows unplanned and the haphazard growth of the town.

The town of Kullu is situated at the confluence of Sarvari and Beas rivers and remains a seat of administration of the Kullu District. It now serves as the district headquarter. It is located on the National Highway No. 21. In the past trade routes connected Yak land, Ladakh, Tibet and Lahul Spiti. The Municipal town of Kullu occupies about 7 sq. km. area with a population of 14,569. The entire Kullu town has been divided into 12 wards and 14 blocks. The urban agglomeration of Bhuntar is also located on Highway No. 21 about 45 km. from Manali and 5.0 km. down to Kullu. It is situated at the trijunction of Kullu-Manali, Manikaran and Chandigarh-Delhi route. Having an airport, the town works as the gateway to Kullu valley. The total area of the town is 2 sq.km. with a total population of 3114 (1996). There are 3 wards with 6 blocks. The town of Manali is situated at a height of 2000 m from the mean sea-level. River Beas and its tributary Manalsu drain the town on two sides. The N.C.A. of Manali has 3 wards and 5 urban blocks with a local population of 4387.

General Land Use Pattern

The land use pattern in the region is varied and complex. Steep and rugged topography, coupled with high intensity rainfall provides forests and grassland as the predominant land use pattern in the region. The term land

use in the context of this research has a specific connotation seeking to present distribution of geographical area of the state in terms of various uses of land, viz. land put to non-agricultural uses, agricultural uses, net sown area, etc. Government wastelands and forests have not been taken into account.

Till recently, the main occupation of people in the region was subsistence agriculture. This was not because of their own choice but under the pressure of environment and lack of adequate technology. The land holdings are marginal in nature, the scope of increasing the agricultural land is limited. Instead of doing agriculture for subsistence, people started practicing it for commercial purposes. Thus, there has been a change in the cropping pattern in the agricultural land use. Farmers are now giving more emphasis to growing cash crops and vegetables, viz. potato, pea, etc. they have also started cultivation and orcharding on moderate to steep slopes. Therefore, within the valley, all the available slopes and plateaux land have been brought under agriculture. Land use pattern shows that all the four revenue villages have maximum area under agriculture, particularly under cultivation. Very few areas have been devoted to road, which is an indicator of the poor inaccessibility in the valley.

Agriculture

The economy of the region is basically agrarian and about 70 per cent of the workers are engaged in agricultural activities. However, agro-climatic conditions provide a range of potentialities for growing cash crops like off season vegetables, seed potatoes, pulses and temperate fruits apart from the cereals, millets and oil seeds. Among the cereals, wheat, maize, paddy and barley are extensively grown. Because of the hilly region cultivation by irrigation is limited. The agriculture in the region is, therefore, wholly dependent on the vagaries of nature. In order to increase the agricultural production the use of improved varieties of seeds and chemical fertilizers have been introduced by the government. The government has taken various measures from time to time to improve production. Maize is the main cereal crop of the region. However, among the Rabi crops, wheat, barley, masur, mustard seed, spices, onion are the important while rice, kodo, mash, kulthi turmeric etc. largely grown during kharif. The vegetables grown during the kharif season are tomato, peas, cauliflower, and cabbage. Due to hilly terrain, the source of irrigation in the area is "Kuhls" or diversion channels from the perennial 'khads' and stream.

Horticulture (Apple Orchardng)

Agriculture has made rapid strides in the region. Progressive farming has caught up in the region. Farmers are increasingly taking to high-yielding varieties, fertilizers and improved techniques of cultivation. Subsistence farming has given place to commercial farming with regard to horticulture

and cash crops. Leading orchardists of apple earn as much as Rs. 50,000 per hectare. They have their open arrangements for plucking, preserving, packing, transport and marketing. Captain A. T. Bonon was the pioneer horticulturist of apples at Manali area. Besides apple, other fruits are also produced. Wild cherry is the local produce. Plums are ready for market in June. Strawberries grow luxuriantly but need heavy watering. There are also wild varieties of almonds pistachio nut, pomegranate, etc. But these items are not grown in abundance.

Development of horticulture has gone a long way in ameliorating the economic conditions of those engaged in this occupation. In order to give fillip to horticultural activities in the region, steps are being taken by the government as well as by the orchardists to improve the system of laying of orchards and maintaining and unkeep of the fruit trees. Fruit plants are made available to the growers by the government through the progeny-cum-demonstration orchards. In addition, private registered nurseries are also functioning in the district headquarter of Kullu, to cope with the demand of fruit plants. In the lower valley areas apple orcharding is replacing the agricultural land.

Animal Husbandry

After agriculture and horticulture, livestock is the most important source of income in the agriculture based economy of the region. Every household invariably keeps few cows, oxen, sheeps and goat. Milk, meat and eggs provide protein for human diet and manure for the fields. In addition, as the use of machinery is not possible due to hilly terrain bullocks are mainly utilised for ploughing the fields. Hence, importance of livestock can hardly be minimised. Sheep and goats are also found in quite good number in the region. These animals are generally being kept not for milk purposes, but largely for the purpose of the requirements of meat wool and local manure.

If we take account of their seasonal movement it is the month of April when upward journey begins from Bilaspur, Mandi, and Kullu areas. They reach Manali by the end of April and reaches Lahual by the end or through Rohtang Pass. Their downward journey begins by the end of August and by October they reach Manali. Shepherds are paid by the owners of sheep and goat in either cash or labour. In fact those who cannot pay in cash, does the cultivation for the shepherded households. Wool cutting is carried out twice a year.

Fisheries

The entire Kullu valley is webbed by the perennial rivers and rivulets with considerable amount and flow of water. The valley may be proved as potential fish producing centre as there is a lot of scope for pisciculture in the valley. At present, fishing is done in the following *nala* and rivers. (Table: 6).

Manufacturing Industries

Rigid terrain and inefficient means of transportation have led to a very poor industrial growth in the valley except few cottage and small scale industries; nothing is visible in this regard on a large scale. Also, an absolute absence of metallic and non-metallic resources is also responsible for negligible industrial development. However, the small industries whatsoever established are based on local material. The important industries are handloom, sawmills, wooden furniture, leather footwear, smithing, wood and bamboo works, and household processing units. Considering all the above works as a unit, there were about 18 units in the Upper Beas Basin in 1970 which increased to 75 in 2012 (Table 7).

Tourism Industry

The Upper Beas Basin is located in a beautiful valley of river Beas which is a main attraction for tourists. Covered with snow peaks and green lush forests and panoramic views of Solang valley adds natural value to boost tourism industry in the Upper Beas Basin. Tourism has become an important source of economy for the state government in general and for local community in particular. Since the beginning of the decade of 1980s, the flow of tourism prevailed over the paradise of Jammu and Kashmir. As tourism flourished in Kullu Valley, the socio-economic conditions of the local communities enhanced. People got different kinds of job hence, now there exists a clear-cut division of labour. The construction of hotels and guest-houses, opened the horizon for labourers. A number of shops, emerged making Manali a big market centre. The glimpse of hotels and guesthouses have filled the land occupancy in the Manali. To entertain the tourists the local people are engaged in different activities like tracking, hiking skiing, and snowball games at Rohtang Pass. Tourist guide, driving, cleaning and other kinds of jobs have created a wealthy tourism in the valley. No doubt, a number of geo-ecological crises have emerged due to tourism, but, the local communities prefer tourism in the valley for the value of their land and for their economic well being.

Infrastructure (Health)

In terms of health, people in the different villages do not experience major problems except minor disease or infections like cold, headache or backache etc. One of the diseases which were considered important though not existing now was 'Antrasodh' particularly among children of age group 1-5 years. During Antrasodh children do vomiting and have the problem of diarrhea. Earlier when people used to suffer from any kind of disease they were totally dependent on 'local Vaid's' (Indigenous doctors) who generally used medicinal herbs like 'Kadu', 'Hare', and 'Patush'. People who used to take the treatment from these vaid's didn't give them money but worked for them may be in the fields or used to give them a share in terms of crops.

Due to construction of hospitals, clinics and dispensaries, now people rely on modern medicines. With the change in mentality, people are adopting treatment from hospitals and dispensaries, hence there is change in mortality rate.

Energy

Energy is an important source used extensively for the livelihood. Earlier wood was used as energy source, now due to tourism stoves and gas cylinders are also available. But wood is still preferred because kerosene used in stoves is not easy for people to get. According to a survey, kerosene is being sold in black market by government officials to hoteliers in large quantities and local people get it in a very small quantity. Another important reason for extensive use of wood is that in Kullu district winters are severe with storm with snow storm, therefore, wood is essential for them to survive.

Water

The main source of water is streams locally called Kulhs or nalas, springs and government taps. Majority of villages have problem regarding water availability particularly in winter seasons. During winter, water freezes in taps thus villagers have to cover long distances to get drinking water. Quality of water varies from moderate to good. Distance covered for getting water has changed to some extent. Earlier people used to cover comparatively long distances to get water but now there are government taps either outside or inside of their houses. Nehru Kund (6 km from Manali) is a perennial source of drinking water supply from where, water is taken for distribution to all the hotels around the areas of Manali. Water is supplied through pipes and canes from Nehru Kund.

Transportation

Extensive, efficient and economical means of transport and communication are 'sine qua non' for the economic, social and cultural development. On account of remoteness of locations and hilly terrain the Upper Beas Basin particularly remained isolated. The hilly terrain and rapid streams have been formidable barriers of development of modern means of transport and communication. Till recently the means of transport were meagre and people had to rely on bridle paths and on human and animal transport.

In terms of road, the National Highway 21 across the study area passing through Bashist, Bahang, Palchan and Kothi. The settlements are joined with sub-roads called village roads. In Bashist its phaties like Chadiari, Mathiana. Koshla, Kanchnikoot has such type of road. Remaining villages have pathways except Buruwa which has semi-metalled road.

Since, the very beginning from Bilaspur to Kullu, the rigid terrain is unfavourable for the development of Railway, hence, Kalaka, Shimla and Chandigarh are the nearest approachable stations. Bhuntar airport which is 45 km. from Manali is a small aerodrome providing air services and functioning a gateway to the valley.

Institutional Organization/Non-Governmental Organizations (NGO's)

A number of institutions have been set up in the valley. Among the important governmental organizations, Tourists Information Center (TIC), Public Works Department (PWD), Department of Health and Irrigation (DHE), Western Himalayan Mountaineering Institute (WHMI), Snow Avalanche Study Establishment (SASE), Institute of Winter Sports and Paragliding (IWSP), Alpine Agriculture Research Institute (AARI) etc. have been set up by the Central and State Governments. A good number of people of the valley are aware and educated. They have registered a number of Non Governmental Organizations (NGOs). Among the important N.G.Os Mahila Mandal, Yuvati Mandal, NavYuvak Mandal, Taxi Union, Society of Holistic Ecological Rehabilitation (SHER) and Arohi are important. Apart from the above governmental and non-governmental organizations, a number of cooperative societies have been set up by different cross-sections of the communities. Some of the important are listed below (Table 8.)

Concluding Remarks

One of the most beautiful places of India, the Upper Beas Basin is cradled in the lap of middle Himalayas. The river Beas is the lifeline, which nurtures rich heritage of nature and culture. The altitude of this valley attributes soothing climate as cool temperature which in turn gives rise to towering deodars and other coniferous trees. The crests of the mountains wear a cap of perennial ice. All these attractive attributes of the valley welcome tourists pouring in the valley, specially, during summers.

But the process of change by spawning tourism is unveiling scars of ecological stress on the life-style and nature of the region. The space pattern is adversely changing. Apple orchards are spreading on the traditional farmlands while population has increased 46 per cent between 1971 and 2011. Thus, the population pressure and the sprawling tourism have shrunked the forest cover of the region. No doubt, changes should be well balanced and changes should be brought about in the ways of life of those who are to be affected most. Only then man and environment could go hand in hand.

Table 1
Decadal Variation in Demographic

Year	Population	Growth Rate	Sex Ratio	Density
1901	1.9.585	-	-	-
1911	1,24,803	4.36	1000	-
1921	1,22,027	2.22	1015	-
1931	1,31,425	7.70	1006	-
1941	1,37,202	4.40	930	-
1951	1,45,888	6.19	941	-
1961	1,52,925	4.97	945	28
1971	1,92,331	25.79	920	35
1981	2,38,734	24.16	918	43
1991	3,02,432	26.68	920	55
2001	3,81,571	14.76	927	69
2011	437903	-	962	80

Source: District Statistical Office, Kullu, H.P. 2014.

Table 2
Caste wise Population in Upper Beas Basin (in number)

Category	Male	Female	Total	Per cent
General	4873	4886	9759	76.3
S.C.	1088	1112	2200	17.2
S.T.	431	394	825	6.5
Total	6392	6392	12784	100.0

Source: Panchayat Offices, Manali, 2012

Table 3
Growth of Urban Population in Himachal Pradesh

Year	Population
1981	3,26,000
1991	4,57,000
2001	6,37,000
2011	8,50,000

Source: Statistical Outline of Himachal Pradesh 2012-13

Table 4
Growth Rate of Urban Population in Himachal Pradesh

Decade	Growth Rate (%)
1951-61	15.89
1961-71	35.68
1971-81	34.76
1981-91	40.00
1991-2001	45.00
2001-2011	45.00

Source: Govt. of Himachal Pradesh. Final Report Kullu-Manali Regional Plan. 2012.

Table 5
Progress in the Number of Towns and Urban Population in Upper Beas Basin

Decade	No. of Towns	Urban population
1951	1	3644
1961	1	4886
1971	2	10758
1981	3	16924
1991	3	21011
2001	4	34987
2011	4	41391

Source: District Statistics Office, Kullu, 2012.

Table 6
Fishing Potentiality in the Beas Basin Tributaries

Name of River/Nala	Stretch of Fishing (KM)
Heas upto Bajaura	82
Heas upto Largi	101
Solang	21
Monalsu	30
Alaini and Tributaries	26
Jagatshukh	16
Chhoki	80
Suljain	20
Fojal	48
Parbati and Malana	113
Gadsa	33
Tirthan and tributaries	99
Kurpan	64
Ani	48

Source: District Census Handbook, H.P. Series7, 2012.

Table 7
Growth of Industries in Upper Beas Basin

Industries	1971	1981	1991	1996
Handloom	8	16	28	34
Sawmills	3	7	11	16
Wooden Furniture	1	2	3	5
Leather Footwear	1	1	2	3
Smithy	3	4	5	6
Wood and Bamboo Works	2	2	3	4
Household Processing Unit	-	1	2	5
Total	1-8	33	54	73

Source: Panchayat Office: Manali, 2012.

Table 8
Cooperative Societies in the Upper Beas Basin

Name	Location
1. Mahila Consumers Cooperative Society	Kullu
2. Mahila Cooperative Agricultural Service Society	Naggar
3. Mahila Wool Workers Industrial Society	Kullu
4. Maharaja Steel furniture Makers Cooperative Industrial Society	Kullu
5. Hill Queen Weavers Society	Bhuntar
6. Dana Leather Workers Society	Manali
7. Kullu Mahila Gram Udyog Society	Kullu
8. Deo Bhumi Women Weavers Society	Kullu
9. Nagar Vikash Khand & Loom & Handi Cooperative Industrial Society	Nagar
10. Chichoga Harijan Handloom Weavers Society	Chichoga
11. Bashist Cooperative Consumer Stone Society	Bashits
12. Oози Valley Consumers Cooperative Society	Manali
13. Himalyan Adventures Cooperative Society	Manali
14. Shanag Cooperative Agriculture Service	Shanag
15. Manali Potato Marketing Society	Manali
16. Snowlands Photographers Society	Manali
17. Chiyal Cooperative Agricultural Services	Chiyal

Source: Lahul-Spiti Potato Marketing Society, Manali: 2012.

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